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Southwestern MEDICINE

OFFICIAL JOURNAL OF THE SOUTHWESTERN MEDICAL ASSOCIATION AND EL PASO COUNTY MEDICAL SOCIETY

January, 1950

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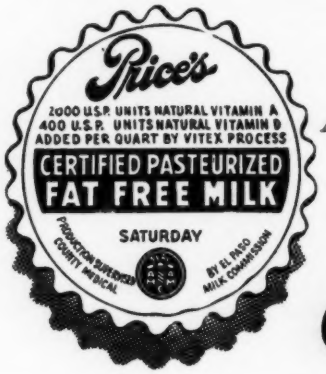

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THE FUNCTION OF THE WOMEN'S AUXILIARY

Three outstanding members of the highly active Women's Auxiliary of El Paso County Medical Society are shown above. They are, from left, Mrs. Robert F. Thompson, councilwoman to the Texas State Medical Auxiliary; Mrs. J. Leighton Green, president of the Women's Auxiliary of El Paso County Medical Society; and Mrs. George Turner, treasurer of the National Women's Medical Auxiliary.

To understand the function of an organization such as the Medical Auxiliary, one cannot do better than to review the objectives and the activities of the El Paso County Medical Auxiliary. This society has an active membership of one hundred and forty-two and is proud to include in its enrollment the treasurer of the National Auxiliary, Mrs. George Turner, and the councilwoman to the State Medical Auxiliary, Mrs. Robert Thompson. Mrs. J. Leighton Green as president ably co-ordinates the local activities.

The local society sponsors a Nurses' Scholarship and Assistance Fund. The purpose of this project is to award a scholoraship to the outstanding student of nursing each year, and to lend assistance to student nurses. Miss Belen Gonzalez was the recipient of the award this year. Further, as a memorial to its deceased members, the society contributes annually to the Library Fund, the Medical Students' Loan Fund, and the Widows and Families of Deceased Physicians Fund.

FIVE OBJECTIVES

The Medical Auxiliary has five prime objectives which are the basis for its program:

1. To extend the aims of the medical profession to all organizations which look to the advancement of health and health education.
2. To cultivate friendly relations and promote mutual understanding among physicians' families.
3. To participate in any endeavor on the request of the Medical Society, whether at the national, state, or county level.
4. To assist in the entertainment at all conventions sponsored by the various Medical Societies.
5. To co-ordinate and advise with any other organization concerning the programs which pertain to health and humanitarianism.

ONE-ACT PLAY

In order that the members have these objectives clearly defined, at the El Paso Auxiliary's October 10th Meeting at the Turner Memorial Home, Mrs. H. D. Hatfield wrote a clever, one-act play, entitled, "Rehearsal for Duty," which was presented as a part of the school of instruction program. This school of instruction program is part of the Texas state program intended to co-ordinate the activities of each individual county Auxiliary. On November 14th the legislative chairman, Mrs. John Peticolas, presented to the Society and its special guests, the El Paso Dental Auxiliary, Dr. Celso C. Stapp, who outlined the newest developments in socialized medicine.

The Medical Profession in general realizes that the Auxiliary is a well-defined and integral part of its Medical Society. This is especially true in these days of political strife. The Auxiliary, functioning as a unit, has done a tremendous amount of work in bringing before lay organizations the profession's viewpoints on the highly controversial subject of socialized medicine, and will continue to do so. In view of this fact, it is necessary that the activities of both societies be closely and adequately co-ordinated.

NEW OFFICERS

The officers for 1949 and 1950 are: Mrs. J. Leighton Green, president; Mrs. Louis Breck, president-elect; Mrs. Delphin von Briesen, Mrs. Newton Walker, Mrs. Joe C. Carter, first, second, and third vice-presidents; Mrs. Leigh Wilcox, corresponding secretary; Mrs. Clement Boehler, recording secretary; Mrs. M. S. Hart, treasurer. Directors are: Mrs. A. D. Long, Mrs. J. J. Gorman, Mrs. George Turner, and Mrs. H. H. Varner.

DIRECTORY OF NEW MEXICO MEDICAL SOCIETY

As a service to the membership of the New Mexico Medical Society SOUTHWESTERN MEDICINE herewith publishes a complete roster of the Society by counties. — The Editors.

BERNALILLO COUNTY
Albuquerque

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ADLER, STUART W.
817 E. Central
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221 W. Central
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221 W. Central
BARTELS, RICHARD R.
221 W. Central
BARTOLUCCI, R. J.
106 S. Girard
BASS, HUGH L.
924 Park Ave.
BEAUDETTE, ROBERT
221 W. Central
BECK, H. J.
106 S. Girard
BECKER, HENRY
c/o Mrs. E. W. Grasser
123 N. Maple
BIVINGS, C. K.
1406 W. Central
BOWERS, LeROY J.
221 W. Central
BREHMER, H. L.
221 W. Central
BRENTAN, EMANUEL
1111 E. Central
BROCK, C. LeROY
715 W. Gold
CLARKE, L. E.
215 N. Seventh
CLARKE, S. C.
Box 371
CLAUSER, ALVIN R.
109 S. Elm
CLAYTON, E. M.
202 W. Central
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221 W. Central
COHENOUR, WM. E.
221 W. Central
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221 W. Central
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521 N. Aliso
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323 S. Amherst
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221 W. Central
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221 W. Central
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200 N. Walter
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221 W. Central
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206 N. Dartmouth
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221 W. Central
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106 S. Girard
FORBIS, ROBERT EDGAR
106 S. Girard
FREEDMAN, HAROLD L.
7208 E. Central
FRIEDENBERG, ROBERT
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FRISBIE, EVELYN F.
221 W. Central
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922 W. Tijeras
GOELITZ, H. W.
1007 N. 21st
GORE, GEORGE J., JR.
403 W. Harwood
GORE, THOMAS L.
102 S. Vassar
GRIFFIN, JOHN F.
106 S. Girard
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221 W. Central
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907 W. Bridge
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221 W. Central
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221 W. Central
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221 W. Central
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1612 Sigma Chi Road
JACOBSON, ALLAN
221 W. Central
JANUARY, H. L.
221 W. Central
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106 S. Girard
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106 S. Girard
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Box 37, Old Albuquerque
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1704 E. Silver
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221 W. Central
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109 S. Elm
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109 S. Elm
LEVINE, LOUIS
221 W. Central
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221 W. Central
LOVELACE, W. R., II
221 W. Central
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109 S. Elm
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221 W. Central
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106 S. Girard
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624 N. Tulane
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2929 Monte Vista
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221 W. Central
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221 W. Central
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221 W. Central
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5203 E. Marquette
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221 W. Central
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221 W. Central
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702 E. Central
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221 W. Central
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201 S. Arno
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800 E. Central
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404 W. Lead Ave.
ROWE, FRANK A.
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221 W. Central
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106 S. Girard
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106 S. Girard
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221 W. Central
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109 S. Elm
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221 W. Central
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WERNER, WALTER I.
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221 W. Central
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800 E. Central
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221 W. Central

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Reserve, New Mexico

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612 N. Main
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120 N. Kentucky
Roswell, New Mexico
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308 W. 2nd
Roswell, New Mexico
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Roswell, New Mexico
GRISWALD, G. W.
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HAIRE, R. D., JR.
706 W. 2nd
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Dexter, New Mexico
LANDER, E. W.
Roswell, New Mexico
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401 N. Penn
Roswell, New Mexico
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Hagerman, New Mexico
MALONE, E. L.
113 N. Kentucky
Roswell, New Mexico
MARSHALL, I. J.
215 W. 3rd
Roswell, New Mexico
MARSHALL, U. S.
215 W. 3rd
Roswell, New Mexico
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310 W. Alameda
Roswell, New Mexico
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308 W. 2nd
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506 N. Richardson
Roswell, New Mexico
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Roswell, New Mexico
PRUIT, ALTON
406 N. Penn
Roswell, New Mexico
SERVICE, A. C.
406 N. Penn
Roswell, New Mexico
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Roswell, New Mexico
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Roswell, New Mexico
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Roswell, New Mexico
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Roswell, New Mexico
WORTHINGTON, W. N.
Roswell, New Mexico

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Koehler, New Mexico
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Clayton, New Mexico
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Raton, New Mexico
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Raton, New Mexico
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Raton, New Mexico
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Springer, New Mexico
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Cimarron, New Mexico
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Springer, New Mexico
WHITCOMB, O. J.
Raton, New Mexico

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Clovis, New Mexico
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119 W. 5th
Clovis, New Mexico
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N. Main
Clovis, New Mexico
COX, VINCENT M.
516 Mitchell
Clovis, New Mexico
CURRY, R. L.
600 Mitchell
Clovis, New Mexico
DABBS, W. D.
600 Mitchell
Clovis, New Mexico
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521 Connelly St.
Clovis, New Mexico
HALE, P. E.
415 Mitchell
Clovis, New Mexico
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Clovis, New Mexico
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419 Mitchell
Clovis, New Mexico
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Clovis, New Mexico
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413 Mitchell
Clovis, New Mexico
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407 Pile St.
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Las Cruces, New Mexico
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Las Cruces, New Mexico
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108 S. 2nd
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DOEPP, F. F.
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803½ W. Mermod
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Artesia, New Mexico
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408 W. Mermod
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102 W. Fox
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MAYES, LePAGE
701 Canal
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122 N. Canyon
Carlsbad, New Mexico
PATE, L. H.
122 N. Canyon
Carlsbad, New Mexico
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District Health Officer
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109 S. Roselawn
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701 N. Canal
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Artesia, New Mexico
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701 N. Canal
Carlsbad, New Mexico

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204 W. Market
Silver City, New Mexico
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Silver City, New Mexico
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Santa Rita, New Mexico
SLUSSER, GERALD A.
101 N. Bullard
Silver City, New Mexico
WATTS, R. E.
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Lordsburg, New Mexico
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De Moss Bldg.
Lordsburg, New Mexico

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Eunice, New Mexico
BADGER, D. C.
Hobbs, New Mexico
BADGER, W. E.
Hobbs, New Mexico
BARZUNE, BENJAMIN
Box 403
Eunice, New Mexico
GILLETT, Hilton
Lovington, New Mexico
HARDY, S. I.
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HEFFNER, E. A.
Hobbs, New Mexico
HODDE, H. W.
Hobbs, New Mexico
JENSON, ALFRED J.
Hobbs, New Mexico
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Hobbs, New Mexico
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Hobbs, New Mexico
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601 N. Shipp
Hobbs, New Mexico
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Hobbs, New Mexico
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Hobbs, New Mexico

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Corona, New Mexico
ENGLISH, FRANK A.
308 W. 2nd St.
Roswell, New Mexico
LEWIS, A. J.
Ruidoso, New Mexico
MOORE, ROBERT LARRY
Ruidoso, New Mexico
SHAVER, P. M.
Carrizozo, New Mexico
SUTTON, R. S.
Ruidoso, New Mexico
TURNER, J. P.
Carrizozo, New Mexico

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Deming, New Mexico
OXFORD, A. L.
Columbus, New Mexico
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421 W. Pine
Deming, New Mexico
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300 S. Copper
Deming, New Mexico

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Gallup, New Mexico
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Gallup, New Mexico
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110 E. Mesa
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Gallup, New Mexico
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Gallup, New Mexico
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Gallup, New Mexico

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Mora, New Mexico

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Tucumcari, New Mexico
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ZIEGLER, S. R.
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Portales, New Mexico
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Portales, New Mexico
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Portales, New Mexico

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Los Alamos, New Mexico
GILL, DAN C.
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Los Alamos, New Mexico
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Los Alamos, New Mexico
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LUSHBAUGH, CLARENCE
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NEWHALL, ANNE
Los Alamos, New Mexico
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Los Alamos, New Mexico
OAKES, W. R.
Los Alamos, New Mexico
POWER, J. L.
Los Alamos, New Mexico
SHAFER, C. L.
Los Alamos, New Mexico
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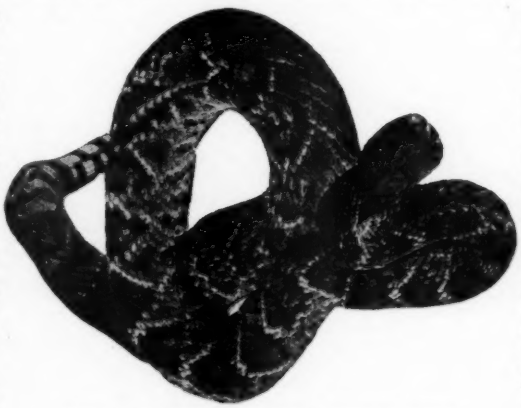
TREATMENT OF SNAKE BITES

Russell Holt, M. D.
El Paso, Texas

Even though it has been twenty-two years since Jackson[5] and Crimmins[2] published their work advocating radical changes in the treatment of snake bites, there still remains much confusion about the first aid and final procedures one must observe to save a life from venom poisoning. To most successfully treat cases of snake bite, one must know the types of snakes responsible for poisonous snake bites, the physical properties of the venom, the response of the tissue, and the most effective medical therapy currently known.

DISTRIBUTION OF VENOMOUS SNAKES

Practically every portion of the United States is inhabited by poisonous snakes, all of which may be classified in four types. Three types belong to the viper family including the Rattlesnake, the Water Moccasin and the Copperhead Moccasin.[3] The fourth type is the brightly colored Coral Snake which belongs to the same family as the Old World cobras and inhabits the southern portion of the United States including the Mexican border. Inasmuch as the Water Moccasin, the Copperhead Moccasin and Coral Snake are rarely seen in the Southwest, the Rattlesnake is responsible for the major portion of our poisonous snake bites. Of the several species of rattlesnakes found in the Southwest, the one best known is the Diamond-back Rattlesnake (Crotalus Atrox.) This snake is large, very irritable and ranks first in the number of fatalities inflicted.[3]



TEXAS DIAMOND-BACK RATTLESNAKE (CROTALUS ATROX)

Found in arid regions from Texas to California.

PHYSICAL PROPERTIES OF VENOM

The venom from the rattlesnake is composed largely of albuminoids[4] and lacks the abundance of neurotoxin found in the poison of some other snakes. The effect upon the tissue is very irritating, causing a proteolytic and cytolytic action. Due to the proteolytic action, large sloughs are produced especially at the location of the bite. The cytolytic action produces hemolysis of the blood, a very important and serious effect. Other less important enzymes are known to exist, further irritating the tissue.[6]

TISSUE RESPONSE

The tissue response to the snake venom follows a characteristic pattern. Due to the extreme irritation, large quantities of lymph are released to dilute the toxin. This reaction causes marked swelling and pain, a characteristic of poisonous snake bites. The excessive swelling is partly responsible for the slow absorption of the venom which if allowed to remain in contact with the tissue will cause necrosis or autolysis. Care also must be exercised to combat bacteria, especially B Welchii,[5] which are present in the wound and responsible for most of the delayed deaths that occur.

The flow of the venom to various parts of the body usually follows the vessels and channels of the lymphatic system. In man, where there is considerable subcutaneous fat, the lymph vessels and channels pass through the fat and areolar tissues up to the elbow or to the axilla before the vessels pierce the deep fascia to the glands. In the lower extremities these channels pass through the deep fascia at the knee and at the inguinal region.[4] Observation indicates the venom moves into the abdomen from the lower extremities and into the chest and neck from the upper extremities, due to gravity influences on the flow of venom through lymphatic channels.[4] Fortunately, snake bites usually do not penetrate the deep fascia of man which, as indicated below, is of tremendous importance when applying the tourniquet after a snake bite.

MORTALITY FROM RATTLESNAKE BITE

Estimates indicate more than 1,500 individuals are snake bite victims in the United States each year. The prognosis for each victim is influenced in a large measure by the location of the bite. Fortunately, most bites occur on the feet and legs where treatment is the most successful. The hands and arms are second in frequency of snake bites received but are a more serious location than on the feet and legs. Wounds of the face or body are extremely serious in that the victim may die within a few minutes or even seconds. When a sizeable dose of venom is injected into a vein, death may follow instantly. Usually death occurs from 36 to 48 hours after the bite. If a death occurs after 27 hours of treatment, the cause is probably a secondary infection, especially gas baccilus.

For various reasons a rattlesnake may not inject the maximum portion of poison possible at a single bite. Nevertheless, the life of the victim is in danger. Studies indicate the average adult rattlesnake has about ten to twelve drops of venom, and when dried each drop produces 22 milligrams of venom.[2] The minimum lethal dose of rattlesnake venom for a dog is 1 milligram for each kilogram of body weight and for man, 1 milligram for each of 3 kilograms of body weight. Consequently, a rattlesnake may give in a single bite, 10 to 12 lethal doses for a man.

TREATMENT OF SNAKE BITES

For ages the treatment for snake bites has been confusing and influenced by superstition. In 1927, Jackson[5] and Crimmins[2] published the results of their reasearch which was enlightening. The physical properties of snake venom were described in addition to the effect on laboratory animals. Because of this work they were able to advance a new method of treatment, namely, suction or mechanical treatment, a procedure crudely practiced by primitive people for ages.

In Jackson's research, 23 experiments were performed to study the effect of venom on the dog. Methods of Treatment included the use of kerosene, potassium permanganate, x-ray treatment[6] and suction treatment. He was able to show that suction would remove venom from a wound, this being contrary to the experience of others, and also was able to show that a dog receiving four lethal doses could be cured without a slough if the proper treatment were given.

JACKSON'S TREATMENT

Due to the success of this method in treating poisonous snake bites, Jackson's Treatment merits careful consideration. Steps in administering Jackson's Treatment consist of:

1. Tourniquet — "Release all tight tourniquets and replace them by one just tight enough to obstruct the lymph circulation and not the free venous return of blood."[5] The tourniquet is applied 2 to 3 inches above the proximal margin of swelling and must not obstruct either the venous or arterial flow. A tourniquet properly applied will not require loosening at intervals.[5] A tight tourniquet fails to serve the purpose for which it is intended. It prevents the flow of venom proximally but also slows up the outflow of lymph which is necessary to dilute the venom and to retard its absorption. A tight tourniquet is even worse than none at all in that it may cause gangrene and favors more rapid autolysis of tissue due to preventing lymph formation. Amaral in his chapter[6] on the treatment of snake bite condemns its use but later he is reported to have used it in some cases. Allen still thinks the tourniquet, as now used, is more harmful than good.

SURGICAL PROCEDURE

2. Prepare the area of the snake bite for a surgical procedure.

3. Incise the wound one-fourth inch deep connecting the fang puncture. Then make another incision perpendicular to this incision forming a cruciate wound.

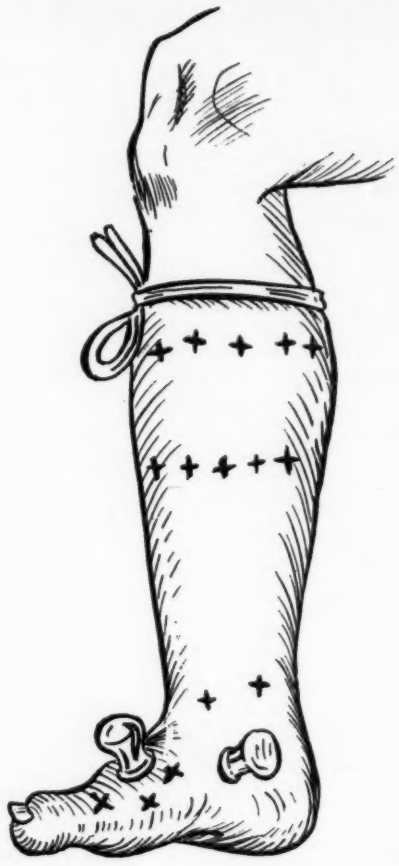
4 Apply suction on the wound twenty minutes of each hour for 12 to 18 hours. Ususally 10 to 12 suction cups are needed to properly treat a patient, and for best results the cups should be moved around to the locations in greatest need of assistance.

The type of suction cup generally used is one of the old B. D. suction cups used in the treatment of renal disease by cupping. There are several rubber types on the market which are entirely satisfactory. Also, a cup may be made by placing a bulb on an ear speculum.

5. Give Antivenom if available. Five to six ampules are required at once, and then repeat with two ampules every four hours as long as necessary. In small children and in toxic or shocked adults, antivenom is extremely valuable although the required dose is larger than is usually considered.

CRUCIATE INCISIONS

6. Surround the proximal margin of swelling with cruciate incisions one-fourth inch long and place them about one inch apart and one-fourth inch deep. If the swelling continues proximal reapply the tourniquet above it and make a new circle of incisions and start the suction. If pools of lymph are noted at any one point, make a cruciate incision over it and start suction. All incisions are to receive suction 20 minutes of each hour for 12 to 18 hours or as long as there is any swelling.



Treatment of lower extremity bite showing two suction cups in place and the cruciate incisions in proper locations for effective suction. The upper circular row of incisions were made 4 hours after treatment had started, and when the swelling began to extend upward requiring elevation of tourniquet.

7. Hot compresses of magnesium sulphate are kept on the wound when suction is not in progress.

8. Blood transfusions are given when needed.

9. Treat shock by accepted methods until it is controlled.

10 "I should like to stress the importance of colonic irrigations of salt and soda solutions."[5]

Allen in reporting on his work favors freezing of the injured part. This slows absorption and serves as an anaesthetic for excision or amputation to remove the area injured. Not only does he not recommend the tourniquet, but instead condemns its use. His treatment appears radical, and I believe if he would use the suction treatment as described above he would prefer it in most cases. His treatment might be of more value where neurotoxins are present.

PROGNOSIS

A study of snake bites in Texas shows that of 83 cases treated with antivenom, five died resulting in a

mortality of 6.0 per cent. If antivenom could have been given early in all cases, the mortality probably would have been reduced. Of 67 cases treated with other methods (the type of treatment was not mentioned but stated they did not get antivenom) 23 died making a mortality of 34.3 per cent. This undoubtedly included some who died instantly, and did not have time to receive any kind of treatment.

In Robert B. Green Memorial Hospital, San Antonio, Texas, where Jackson did much of his experimental work, one death occurred in 1932, the first death in 200 admissions for snake bite. In 1940 they had treated about 900 cases admitted for rattlesnake bite without a death.[7] This record seems convincing that this type of treatment is the most valuable one known. Most deaths from snake bite result from insufficient rather than too much treatment.

SUMMARY

1. Although all four types of poisonous snakes are found in the Southwest, the Diamond-back Rattlesnake leads in fatalities due to snake bite.

2. A knowledge of the physical properties of venom and its effect on tissues is the basis for the treatment of snake bites.

3. The mortality from snake bites depends upon the amount of venom injected into the tissue, the location of the bite and the type of treatment given.

4. Experimental work and actual hospital practice indicate Jackson's Treatment for snake bite, as outlined in this article, is the most valuable.

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NEW OFFICERS INSTALLED IN CIUDAD JUAREZ

New officers of the Ciudad Juarez, Chih., Medical Society, installed at a recent dinner in Casino Juarez are: Dr. Jesus Dominguez S., president; Dr. Efren Saldivar, secretary; Dr. Alberto Gemoetz, treasurer; Dr. Rodolfo Vera B., first vice-president; Dr. Francisco Gutierrez S., second vice-president; and Dr. Ramiro Vera V., third vice-president.

At a recent meeting of the Northern States of Mexico Medical Society in Durango, Juarez physicians who attended urged that Ciudad Juarez be selected as the site for the next meeting of the Northern States Society.

DR. LUIS VALDES,
Ciudad Juarez, Regional Editor.

REPORT OF THE BOARD OF MANAGERS OF SOUTHWESTERN MEDICINE

Presented at the annual meeting of The Southwestern Medical Association in Albuquerque, New Mexico on November 12, 1949, and at the business meeting of El Paso County Medical Society on December 13 in El Paso.

The Journal, SOUTHWESTERN MEDICINE, is now on a firm financial and editorial foundation. The current circulation is 2149. The size of the journal has grown from twelve pages to thirty-two pages. It is now being edited by Dr. Lester C. Feener of El Paso, Texas. The financial status of the journal is that it is being published by Mott and Reid, a public relations agency in El Paso. They published it originally at a loss, later on broke even, and now are netting approximately $150 a month for themselves out of this publication. This is a very small reward for the amount of time and effort they are putting in on the journal. The editor does not receive any compensation nor does anyone else connected with the journal.

The Board of Managers wishes to emphasize again the importance of the New Mexico Medical Association again making SOUTHWESTERN MEDICINE its official publication. This would greatly increase the size of the journal because of additional advertising which could be obtained from the AMA through their block advertising system. However, if this is not accomplished the journal will still be published as it is and should continue to grow.

SOUTHWESTERN MEDICINE reaches all 574 members of the Arizona Medical Association, all 475 members of the New Mexico Medical Society, and all 484 qualified physicians in West Texas in a radius from El Paso running through Del Rio, San Angelo, Abilene and Lubbock and including those cities.

In addition SOUTHWESTERN MEDICINE goes to 495 qualified physicians in the northern Mexican states of Chihuahua, Sonora, Coahuila and Durango. We are virtually the only American journal covering this group. Moreover SOUTHWESTERN MEDICINE goes to 142 leading dentists in the Southwest.

There is one important point, not always appreciated, to be emphasized concerning SOUTHWESTERN MEDICINE. Excepting the Journal of the AMA, this is the only medical publication serve all or more than a section of this great and homogeneous area of range, desert and mountain, with cities and towns at long distances from each other.

Moreover, SOUTHWESTERN MEDICINE is the only journal designed to serve this area. Because of the far distances, the ordinary daily discussion and scientific talk exchanged between physicians in more thickly settled areas is greatly limited in the great Southwest. SOUTHWESTERN MEDICINE is published to fill this gap; and from the enthusiastic response and support of our readers there is little doubt our journal is succeeding in this important effort.

SOUTHWESTERN MEDICINE is listed in the Index Medicus of the American Medical Association.

LOUIS W. BRECK, M. D.
Chairman, Board of Managers

PRURITIS ANI

S. Milton Ramer, M. D., Watts Clinic,
Silver City, N. M.

There is hardly a symptom in all medicine which is more annoying than pruritis ani. Who among us can recall the painfully irresistible tendency to scratch an already irritated anus or the annoyance of attempting to treat a patient with this unfortunate complaint. Unless it is approached in a logical, rational and painstaking fashion, its refractoriness to casual treatment will continue to be a source of annoyance to both practitioner and patient.

The many etiologic agents ascribed to this symptom and the diverse forms of treatment prescribed lend eloquent testimony to the importance this symptom has assumed. Pruritis ani can be a disabling sympton; it can be a painful symptom. The patient suffering from pruritis ani gets caught in the vicious circle of trying to relieve his irritation by scratching, the trauma of scratching causes more irritation and thus the more he scratches, the more he itches and the more he itches, the more he scratches!

Those of us who have had occasion to treat a number of these patients realize the necessity of the thorough investigation required to track down the etiologic agent even though our efforts may go unrewarded. Still, we must never cut corners or proceed in haphazard fashion with treatment, trying first one form and then another until the doctor is exhausted after all known forms of treatment are exhausted.

ETIOLOGY

Pruritis ani may be caused by or accompany every known anal, rectal or colonic disease, as well as many diseases affecting other organs more general in character. Therefore, no examination is complete without a proctoscopic examination. Only too often cryptitis, proctitis, papillitis, ulcer, fissure or fistula will be revealed during this type of examination, treatment of which will ofttimes clear up the pruritis.

In the female, naturally, a complete pelvic examination should be done as pathology of the female genital tract may be the cause of the pruritis. The numerous and varied etiologic agents suspected of underlying this symptom must all be considered if good results with treatment are to be expected. A careful and detailed history is essential in the approach towards proper evaluation of pruritis.

The most important causes to be suspected are (1) any disease of the anus, rectum and colon (2) any skin disease affecting the anal region as atopic dermatitis, contact dermatitis, food allergy (3) as a reflex from diseases of the bladder, prostate gland, uterus, ovaries and vagina (4) general or constitutional diseases (5) intestinal or local parasites (6) fungus infections (7) mechanical irritation from clothing detergents, soaps or moisture (8) poor or improper hygiene (9) psychogenic.

MUCH LITERATURE

The medical literature is filled with articles by reputable men in the various specialties who make the expressed or implied plea for converts to their method of approach and treatment on the basis of their printed successes. But one invites failure if he confines himself to one approach to this tantalizing symptom and neglects the several other routes to a possible successful cure.

Neither the allergist nor the psychiatrist nor the dermatologist can preempt the leading role in all cases. Yet they all play a part in the solution of this medical "whodunit," if it is to have a happy ending for the poor victim suffering with this symptom.

Among the diseases of a more general character which are frequently found to be causes of itching at the anus are (1) diabetes (2) malaria (3) nephritis (4) syphilis and (5) allergic diseases. The menopause is not infrequently responsible for anal and perianal itching in women during that period. In some cases excessive use of tobacco, caffeine containing beverages, condiments or other hypersensitizing substances conduces to the production of this symptom.

MECHANICAL IRRITATION

In some cases, simple mechanical irritation of the skin around the anus caused by the use of coarse toilet tissues or contact with certain prurogenic materials set up the intractable symptom. The act of defecation acts as a trigger mechanism in many of these patients. The presence of moisture in the anal area plays a most important role in the etiology of this complaint. Sweating, particularly in stout people, and in those who are forced to work in high temperatures such as engineers, stokers and the like, rates high in the list of frequent offenders that cause irritation.

I found pruritis ani a fairly common symptom among a large group of men who worked in a large railroad repair shop. In many cases, the symptom responded to simple measures, which will be outlined below. Those who remain seated at long intervals are included in this group also. One should not neglect to ask the patient how they wipe themselves after defecation. When on duty with the armed forces in New Guinea, I noted that the natives found it adequate to splash water on the anal region after defecation. I wonder how many cases of pruritis ani there were among them.

DIAGNOSIS

Many important leads can be elicited in the course of history taking. As I pointed out before leading questions as to occupation, method of wiping, time of day or night the symptom occurs, the existence of concomitant allergies will often establish important clues which will aid in diagnosis. The physical examination including proctoscopic examination may disclose local pathology which will underlie the pruritis. In most cases there is a history of a slight irritation at first. As the itching gains greater and greater attention, the patient attempts to relieve the itching by almost reflex rubbing or scratching which eventually terminates in traumatization of the epithelium.

Later the itching reaches the conscious level and results in a maddening, almost masochistic, type of scratching. A secondary dermatitis with marked hypertrophy, and with cracking and fissuring of the entire circumanal integument ensues. Later the skin becomes lichnified and thickened. The skin about the anus presents a greyish or whitish sodden appearance and a foul-smelling secretion may exude from the folds. Various pigmentary changes from depigmentation to hyperpigmentation may be noted. The attitude of the patient may be one of extreme agitation, tension, restlessness, depression or exhaustion from lack of sleep.

SPECIAL TESTS

Specific tests and examinations should be made to rule out monilia, trichophyton and pin worms. Some

men advocate culturing the organisms, usually streptococci, found in the crypts. Hirschmann used autogenous vaccines made from such cultures for treatment with good results. If an allergy is suspected, dietary control, elimination diets, patch testing or even skin testing may bring to light the cause of the itching. Two investigators analyzed thirty-eight patients with pruritis ani and found that ten had a family history and thirteen a personal history of allergy. Positive skin reactions were obtained in fourteen.

There are those cases which fail to reveal an etiology after the most painstaking search. We must declare them psychogenic in origin and we must let our medical judgment be our guide in deciding whether tapping their unconscious is worthy of trial. There are those who contend that fungi are the most frequent cause of the pruritis and consequently this group recommends bacteriologic studies for isolation of the offending fungus.

TREATMENT

Basically, the treatment of pruritis ani is the treatment of the underlying cause. If it is associated with a constitutional disease, this must be treated. Palliative treatment such as outlined below can be carried out during treatment of the systemic disease. If any anal or rectal disease, as listed above is discovered on examination, this must be corrected in order to insure the best results.

It is beyond the scope of this article to outline such treatment. Specific treatment can be given in those cases where parasites or fungi are isolated. For parasites, gentian violet by mouth is best. If an allergic background is brought out, then proper testing should be done using the type testing the examiner is best qualified to do or else the patient should be referred to a competent allergist.

Sometimes the busy practitioner dismisses the patient suffering with pruritis with an antipruritic ointment or a rectal suppository of some kind along with a shrug expressing utter hopelessness. I wish to stress the folly and futility of such behavior on the part of the physician. Not only will they not relieve the patient but in many cases local applications in the form of ointments, salves or creams will only aggravate the condition. A mild sedative by mouth is far more preferable than an ointment applied locally to the irritated anus.

SITZ BATHS

In the weeping, moist, exudative cases it is best to employ hot or cold sitz baths for at least 20 minutes, either plain or with potassium permanganate, linit or liquor carbonis detergens. Sometimes, ice cubes applied directly to the area will relieve the intense itching. Burow's solution in an aqueous solution of 1:20 or a properly diluted Domeboro solution applied to the weeping area tends to soothe and remove the inflammatory process. A little later as the acute process subsides, a shake lotion can be tried. These can be plain or with a coal tar as liquor carbonis detergens added. The need for proper anal hygiene should be impressed upon the patient. Tap water enemas after defecation and at bedtime are advisable if the patient can take them.

Instead of toilet tissue the patient must use absorbent cotton moistened with tap water or hydrogen peroxide after defecation and wipe from side to side. To maintain dryness of the area, a most important requirement in treatment, a strip of absorbent cotton about one inch by four inches should be inserted in the cleft.

DUSTING POWDER

A dusting powder of equal parts of boric acid, starch and talc put on the cotton before insertion will help maintain dryness. The cotton should be changed after each defecation or about every three to four hours. It is wisest to forbid the use of soaps on the involved area until it is well on the way to recovery. As a general rule possible irritants such as alcohol, condiments, tea, coffee and spiced foods, should be prohibited. In those cases where allergy is suspected the antihistaminic ointments may be tried but these have proved disappointing in my experience.

OFFICE TREATMENT

For office treatment of weeping lesions the following dyes applied by rolling an applicator over the lesions are often helpful:

(1) Berwick's Dye
(2) Castellani's paint
(3) 2% aqueous basic fuchsin
(4) 3% gentian violet, 10% tannic acid, 1% pontocaine
(5) 2% gentian violet in 20% alcohol
(6) When not too acute 3½% tincture iodine followed by 10% silver nitrate, fan dry and cover with compound tincture benzoin application.

RADICAL MEASURES

In the case of the distraught, sleepless, agitated patient it may be necessary to resort to more effective or more radical measures. Injection of the oil soluble anaesthetics as Anucaine, Encupin or Quinocaine will give immediate relief for varying periods. At least 10 to 20 c.c. of the substance should be injected at one visit, preferably one side at a time, which is the method I use. Others recommend a quadrantic distribution of the injections. These anaesthetics not only serve to give local anaesthesia but they also relieve by relaxing the hypertonic sphincter. When all these measures fail to bring relief then the more radical techniques of undercutting and removal must be used. In the right hands and on the right patients these techniques are the only ones which will bring about the desired alleviation of the syndrome of pruritis ani.

SUMMARY

1. The importance of establishing the etiology of pruritis ani is discussed.
2. With proper diagnosis specific treatment will most frequently bring about a cure.
3. Various treatments are outlined.
4. The importance of dryness, drying agents and correct anal hygiene is stressed.
5. Office techniques such as the use of dyes and oil soluble anaesthetics are presented.

SIERRA COUNTY MEETING

The Sierra County Medical Society met recently at the home of Dr. and Mrs. W. L. Minear at Carrie Tingley Hospital in Hot Springs, N. M. The medical department of Carrie Tingley Hospital was also present.

A delicious dinner was served by Mrs. Minear. The scientific part of the program was given by Dr. Minear. The topic of discussion was clinical examination and evaluation of patients in the hospital. The auxiliary met in another room.

Those present were Dr. and Mrs. W. B. Cantrell, Dr. and Mrs. R. W. Fulwider, Dr. and Mrs. E. E. Hubble, Dr. and Mrs. H. B. Johnson, Dr. and Mrs. T. B. Williams, Dr. and Mrs. A. C. White, Rev. Boyd and Dr. Edna White, Dr. and Mrs. George Deyoe, Dr. and Mrs. F. M. Chasten, and the parents of Dr. Minear.

H. B. JOHNSON, M. D.
Regional Editor

SURGICAL MANAGEMENT OF DUODENAL ULCER

By Louis Bennett, M. D., Los Angeles, California

Presented before the Cochise County Medical Society (Arizona,) March 9, 1949.

Any discussion of the surgical management of duodenal ulcer should be prefaced with a definite resume of the accepted indications for surgical intervention in the overall management program of duodenal ulcer. This resume must be based upon the premise that the uncomplicated duodenal ulcer is basically a medical problem. The healing capacity of the stomach and

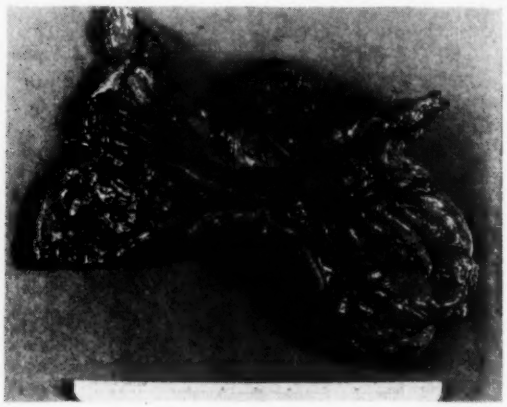

Figure I

duodenum is demonstrated by Figure 1. This is a photograph of the resected portion of the stomach of a patient who had taken a strong caustic by mouth seven weeks prior to the operation. In the seven weeks the corrosive gastritis had healed sufficiently to result in practically complete obstruction of the distal half of the stomach.

The psychologic make-up of the ulcer patient and the effect of the pressure of modern living upon such an individual make-up have been emphasized as important factors in the etiology and re-activation of duodenal ulcer. These factors were very obvious in the experience of managing personnel with duodenal ulcer in the Armed Forces, and are well demonstrated by the following case:

A twenty-four year old, recently inducted man was admitted to the hospital four hours after sudden onset of severe generalized abdominal pain. Pain had been persistent. He had vomited once. There was no history suggestive of previous duodenal ulcer activity. He was fever-free. The abdomen was rigid with generalized and direct rebound tenderness. A diagnosis of perforated duodenal ulcer was made and the patient was operated upon. A frank perforation of a duodenal ulcer was found and repaired. The patient made an uneventful recovery, and after a convalescent furlough, it was decided that he should be returned to limited duty status. He was attached to the Base Hospital detachment for rations only in order that he could be maintained on a controlled diet. He remained symptom-free and was able to do practically full duty for almost a year. At that time he was alerted for transfer within two weeks to a much less desirable station. He was greatly concerned about the transfer and within the two weeks interval, he demonstrated such clinical evidence of reactivation of the ulcer that it became necessary to hospitalize him. He was studied on the medical service and was discharged from military service because of active duodenal ulcer. It seems more than coincidental that he developed the acute ulcer with perforation shortly after he was subjected to the pressure of army life, that he was able to adjust and carry on for almost a year while among friends and on a controlled dietary regime, but that he developed severe ulcer manifestations, when faced with the additional pressure of a transfer to a less desirable station and assignment. Unfortunately, there is not available follow-up information on this patient. It would be of interest to know how he reacted to the stress of meeting competition again in civilian life and occupations.

SOCIAL RESPONSIBILITY

It has been stated that relief from social and economic responsibility, if it were possible, would affect cure in a high per cent of all uncomplicated duodenal ulcers in patients with the psychologic make-up that favors ulcer development. Assuming that this is true, it must be remembered that it is seldom possible in our complex society for such an individual to bring about sufficient changes in these factors, without sacrificing his earning capacity, to produce a material influence upon his ulcer tendency. This is well illustrated by the following case:

A forty-one year old, highly emotional man, who is now under my care, first developed ulcer symptoms in 1938 and a definite diagnosis of duodenal ulcer was made in 1939. He changed his occupation in an attempt to get relief from his "nervous tension". He was not benefited by the change and in 1940 he entered the Forestry Service because it offered a quiet out-of-door life. In 1941 he was disqualified from

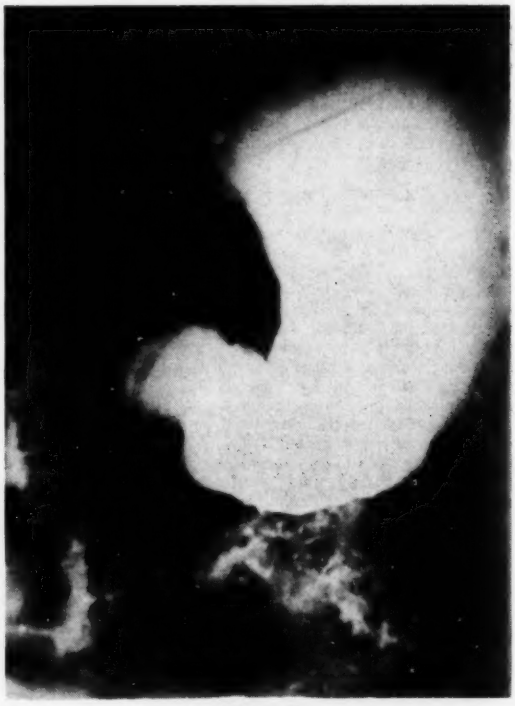

Figure II

this service because of his ulcer. He attributed this to the fact that he could not stay on a proper diet. Since then he has tried several types of work but with periodic bouts of severe distress. Except for the year in the Forestry Service, he has been on some type of medical regime. Recently he was offered the management of a stock farm on a share basis. He was very desirous of taking the offer because of the beneficial effect farm life would have upon his health and because he "was not getting ahead" in his present work; but after weeks of consideration, during which he suffered severe daily and nocturnal distress, he declined the offer because of the uncertainties involved. Obviously it is impossible for this man to alter sufficiently his social or economic status to have any bearing upon his ulcer activity.

THOROUGH TRIAL

Certainly every uncomplicated duodenal ulcer should have a thorough trial on a well controlled medical management program. However, if the response to medical management is not sufficient; and if the patient cannot adjust sufficiently to be able to follow comfortably a gainful occupation, surgical intervention may be considered. In this consideration the economic status of the patient may be an important factor. The occupations of some men are such that it is impractical or impossible for them to change their mode of living or to adhere adequately to a dietary regime. Also, it must be remembered that posterior ulcers that have penetrated deeply into the pancreas are very refractory to medical management. This type of ulcer is characterized by severe deep boring pain, often referred to the back and not relieved by food or anti-acids. One of the common pitfalls in ulcer diagnosis and management is failure to recognize and institute proper surgical management in this type of ulcer before the second serious complication of severe hemorrhage ensues. Surgical intervention may then be considered in these two types of otherwise uncomplicated ulcers under No. 4 below. Except for this category, the indications for surgical management of duodenal ulcer consist of certain definite complications. These complications are:

1. Acute perforation.
2. One or more massive hemorrhages.
3. Cicatrical pyloric stenosis.
4. Intractability.

and to these may be added:

5. Postoperative, symptomatic, anastomotic ulcer with or without reactivation of the duodenal ulcer.

SURGICAL INDICATIONS

These current surgical indications are the result of many controversies and some evolution within the profession; but they are quite generally agreed upon at the present time. They have not changed with the introductions of new surgical techniques nor with the reductions in surgical mortality. In the contemplation of surgical management of these complications, two things must be borne in mind by the surgeon; first, that any surgical procedure carries some risk; and second, that the very existence of the complication constitutes some threat to the patient's life. To relax the above indications means to subject the patient with an uncomplicated duodenal ulcer to an unnecessary surgical risk, and to withhold surgery when the indications are present allows the threat to the patient's life to remain unchallenged, or to increase, depending upon the complication. Proper application of this logic will save unnecessary operations, unnecessary complications and lives.

The surgical management of the complication of acute perforation may be dealt with briefly. Surgeons have been agreed for years that the surgeon's responsibility consists of closure of the perforation and the saving of the life if possible. The mortality rate varies in proportion to the time lapse between perforation and closure.

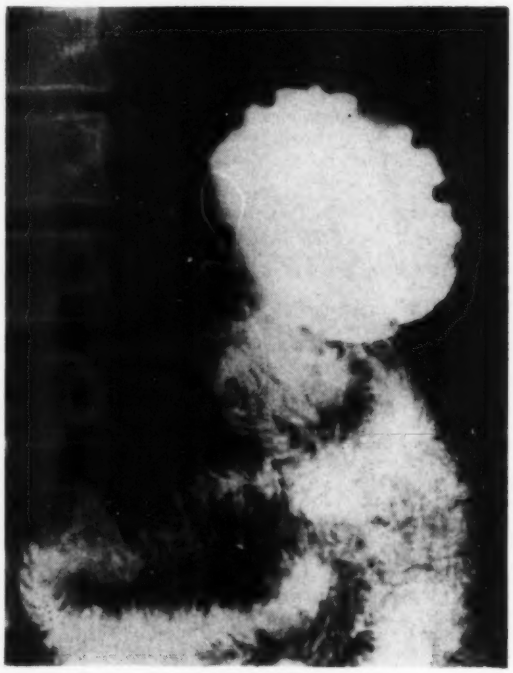

Figure III

The introduction of antibiotic therapy has greatly enhanced the prospects of recovery. Thompson and Prout[1], in 1947, reported mortality rates of 4.7 per cent in perforations of under six hours' duration and 9.0 per cent when the duration was prolonged to twelve hours. McElhinney and Holzer[2] reported no deaths in perforations closed under six hours and 7.5 per cent deaths in perforations of six to twelve hours since the introduction of penicillin and sulfadiazine therapy. Early surgical closure of the perforation, closure of the abdomen without drainage, Levin tube suction to the stomach, adequate blood transfusion and antibiotic therapy, including streptomycin, constitute good surgical management of the acute perforation. Following recovery the patient should be managed on a controlled medical regime. Acute perforation frequently occurs with no previous ulcer history, and many patients have few or no ulcer symptoms following the acute episode. For those who develop further surgical indications, a curative operation of election can be done at a later time. The author has observed second acute perforations in the same patients. The incident of the second perforation certainly constitutes an indication for a curative operation of election following the recovery and rehabilitation of the patient.

COMMON PROBLEMS

Some of the common problems in the diagnosis and management of the acutely perforated ulcer might be mentioned:

One of the diagnostic dilemmas is the patient, usually a young man, who is seen soon after the sudden onset of severe constant upper abdominal pain, and who gives absolutely no history of previous ab-

dominal pain or distress suggestive of duodenal ulcer. The physical findings are those of an acute intraperitoneal involvement. The patient may not be in profound shock and some peristalsis may be heard. A very suggestive sign, if present, is partial relief by sitting up in a hunchback position. Free intraperitoneal air demonstrated by the upright and lateral decubitus films of the abdomen will clarify the situation, providing the diagnosis of acute perforation has been entertained in the differential diagnosis. However air or gas beneath the diaphragm is present in only from 60 to 80 per cent of the cases. Often the most detailed study leaves one in a quandary as to the exact diagnosis. If acute perforation cannot be eliminated with reasonable certainty, the surgeon may be forced to make such a diagnosis and open the abdomen. In six such cases, all men under thirty years of age, in the author's recent experience, acute perforation of a duodenal ulcer was found in four cases, acute infarction of the spleen in one case and in the sixth case, operated upon five hours after the sudden onset of the syndrome described above, a preoperative diagnosis of perforation of a duodenal ulcer was made and an acute suppurative appendicitis was found and removed. This brings up those similar cases in whom, because of localization of findings in the right lower abdomen, a preoperative diagnosis of acute appendicitis is made. At operation, usually through a McBurney incision, there is insufficient pathology in the appendix to explain the illness. Careful examination may demonstrate gastric content in the lateral gutter. With or without this demonstration, it then becomes necessary to close the McBurney incision and to make an adequate incision in order to expose and repair the perforation.

TENDENCY TO REVERT

Since the introduction of antibiotic therapy, there is a tendency in some clinics to revert to the discarded practice of doing additional surgical procedures at the time of closure of an acute perforation. In the author's opinion, simple closure of the perforation is the operation of choice. If any further surgical procedure is indicated, it should be done as an operation of election when the patient is properly prepared.

In the surgical management of the other complications of duodenal ulcer outlined above, the trend was toward subtotal gastric resection prior to 1945. For example, the following quotations are from the writings of my former senior, the late Dr. Vernon C. Hunt: [3], [4], [5].

1935—"I have seldom been forced to employ partial gastrectomy as a primary operation for duodenal ulcer - - -. Furthermore, few execute the operation of partial gastrectomy with a justifiable mortality rate for benign lesions of the stomach and duodenum."

1941—"It seems to me that the rationale of resection of the pyloric third or half of the stomach in many cases of duodenal ulcer is entirely sound, and that partial gastrectomy has attained a status of such height in the treatment of this surgical disease that its eminence can no longer remain obscure."

1942—"Suffice it to state that for the most part they (conservative operations) have been superseded by the operation of partial gastrectomy."

The types of operations performed for duodenal ulcer at the Mayo Clinic for the years 1928 to 1940 and for the years 1932 through 1946 are presented in

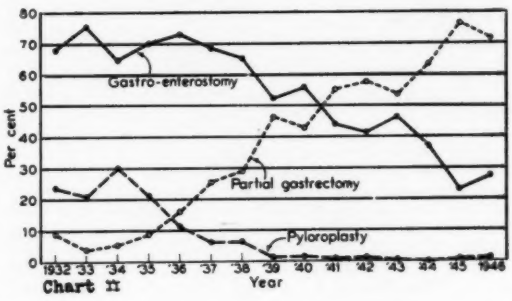

Chart II

Charts I and II respectively. This represented the surgical trend. However, since 1945 the works of Dregstedt and others have focused much attention on the resection of the vagus nerves in the surgical management of duodenal ulcer. This has added to the controversy of the selection of the surgical procedure of election.

BROAD EVALUATION

Since the present differences of opinion among individual surgeons rest between the elective procedures of vagotomy and partial gastrectomy, an attempt was made to determine a current, broad evaluation of surgical opinion by taking a poll of twenty-five surgeons. These surgeons are all highly qualified from the standpoints of training and experience in gastro-intestinal surgery, and they probably represent a cross section of the surgical opinion of Western United States. The method of conducting the poll was by personal contact, conversation or correspondence. The surgeon was asked simply to state his procedure of choice in elective surgical management of duodenal ulcer in young to middle aged patients, who were reasonable surgical risks. Poor risks and elderly patients were not included. The results of the poll are outlined in Chart III. It is obvious that

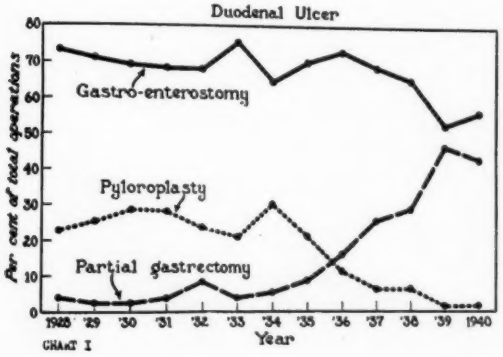

CHART I

OPERATION OF CHOICE	NUMBER SURGEONS
SUBTOTAL GASTRECTOMY	18
VAGOTOMY	4
ANSWERS TOO QUALIFIED TO RECORD	3

CHART III

while resection is the opinion of the majority, and probably more so than it would have been a year ago, still there is not a unity of opinion among surgeons. One can easily verify this difference of opinion by a brief review of the current literature. Extension work is being done to determine the relative merits of the procedures, Mayer, Stein and Rosi [6, 7] have recently published two articles on their studies on vagotomy in the treatment of peptic ulcer. Their final summary was, "It is still too early to make a final evaluation of vagotomy in the treatment of peptic ulcer. Until more information is available concerning the incidence of recurrence of ulcer distress and the possible late sequelae, the use of vagotomy should be limited to clinical investigation with one exception. Complete vagotomy is the method of choice in the treatment of marginal ulcer following gastric resection." Certainly it becomes obvious that the selection of the elective operative procedure must represent some element of the arbitrary on the part of the individual surgeon today.

In order to properly evaluate the various operations for duodenal ulcer, the surgeon must be cognizant of the surgical aims, of what results to expect and of the risk involved in each type of procedure.

GASTRIC HYPERACIDITY

Gastric hyperacidity and hypersecretion are the rule in duodenal ulcer. The two controlling mechanisms of these factors are the psychic control by way of the vagus nerves and what has been called the humoral influence, the control of which is thought to be located in the prepyloric mucosa. The aim of the various surgical procedures that have been devised has been either to allow the ulcer to heal by control of these features, to excise the ulcer, or to both control hyperacidity and hypersecretion and to excise the ulcer.

The actual results accomplished by the various procedures are more difficult to determine. The too frequently reported development of an ulcer in or near the stoma, with probably reactivation of the duodenal ulcer following the indiscriminate use of gastro-enterostomy has thrown this operation into disrepute. However, there are still definite indications for posterior gastro-enterostomy. No attempt will be made to evaluate the late results of vagotomy because of the conflicting literature on the subject and lack of sufficient experience and follow-up on the part of the author. The end results of representative series of gastric resections have been recorded. Lewis and Lemon[8] reported follow-up results on 197 out of a series of 212 patients, upon whom sub-total gastric resection had been done at the Mayo Clinic for duodenal ulcer. Of the 197 patients, "83.5 per cent were well; 14 per cent required some restriction of diet and activity to remain well, and 2.5 per cent experienced symptoms of anastomotic jejunal ulcer. Anacidity, determined by a test meal, developed in 63 to 80 per cent of these patients after partial gastrectomy." Other statistics may be gleaned from the literature, but it would seem that these figures might represent the results that might be hoped for in this operation.

ESTIMATING RISK

In estimating the risk one must again look at the statistics. In view of the recent advances in chemotherapy, improved anesthesia, early ambulation and especially the present appreciation of the value of massive blood transfusions, it would seem that one should re-evaluate the risk of any surgical procedure today. Although these surgical adjuncts do not relieve us of the responsibility of meticulous surgical technique, with the addition of them we should be able to do major surgery with a lower mortality rate than we could five years ago.

The risk of gastro-enterostomy is generally accepted as 1 to 2 per cent. The risk will probably run higher in a carefully selected series than the extent of the surgical procedure would indicate because, in my estimation, this operation should be reserved for the older age group in whom any surgical procedure carries additional risk.

The risk of vagotomy is minimal, and coupled with gastro-enterostomy, it will probably be that of, or slightly exceed the risk of, gastro-enterostomy. The risk of subtotal gastric resection is frequently quoted at 5 per cent. This has been true in the past; however, current figures do not support this statement. Walters, Counseller, Waugh and Clargett[9] reported 241 subtotal resections for duodenal ulcer performed in 1945 with a mortality rate of 1.7 per cent. Walters, Gray and Priestley[10] reported 296 resections performed in 1946 with a rate of 2 per cent. These are certainly enviable results, but with proper selection of cases and with the addition of the adjuncts outlined above, we should be able to attain them today.

On our Surgical Services of the Veterans' Administration Hospital, we recently reviewed 114 consecutive gastrectomies done for duodenal ulcer with two deaths, a mortality of 1.75 per cent.

Posterior gastro-enterostomy is still the operation of choice in certain selected cases. The patients in the fifth decade of life, who are not good surgical risks, and those in and above the sixth decade, who have the complication of cicatricial pyloric stenosis, who have an ancient ulcer history and who may or may not have lost most of the hyperacidity, are ideal candidates for the operation. The results are uniformly, although not 100 per cent, good. The reduced mortality rate and the great relief and comfort afforded the patient more than compensate for the occasional complications in any series of cases. In the preoperative preparation a period of Levin tube suction will greatly reduce the edema of the stomach wall. If gastric hyperacidity and hypersecretion are a prominent feature, vagotomy can be added to the operation with little additional risk.

GASTRIC RESECTION

The operation of subtotal gastric resection is the operation of preference in treating the young to middleaged patient of reasonable surgical risk, who has one or more of the surgical indications of duodenal ulcer. By confining the operation to this selected group, the risk of today should not be formidable. Indiscriminate employment of the operation in nonselected cases will greatly alter this risk and discredit the operation. While it is not within the scope of this paper to discuss surgical technique, a word might be said concerning the amount of stomach to be resected and the question of routine excision of the duodenal ulcer. While it is the custom now to speak in exact fractions of the total stomach that is resected, I know of no way to determine this with accuracy. The build of the patient, the degree and duration of gastric dilation and the variations in blood supply are all factors that affect the configuration of the stomach. In general, it has been the author's aim to remove 60 per cent or better of the total stomach, avoiding the 80 per cent or more resection. It is felt that the higher resections levels are unnecessary, that they are prone to limit the patient's food intake, postoperatively, and that by virtue of the additional technical difficulties encountered, exposure and surgical definition are sacrificed and the operative risk is increased. The question of routine excision of the ulcer is a controversy in itself. Excision of the ulcer is highly desirable but not to the point of jeopardizing the common duct or resecting a portion of the pancreas. It is probable that the liter and not the half-liter should be the unit of transfusion of blood during operation.

It is the surgeon's responsibility that the patient leave the operating table with approximately the amount of blood that he had upon his arrival there. This can only be accomplished by continuous multiple-unit transfusion throughout the operation.

MASSIVE HEMORRHAGE

The management of the acute massive hemorrhage from duodenal ulcer has, in general, been conservative in nature in most of the larger clinics for several years. This type of management was based upon the reasoning that in most cases, with supportive therapy and blood transfusions, the hemorrhage would cease before it became fatal. This logic is still substantial, although not 100 per cent correct, in the young to middle-aged individual who has an acute massive hemorrhage from a duodenal ucer, and it is still good surgical judgment to manage these cases by immediate quantitative replacement of the estimated blood lost during the acute hemorrhage. Surgical intervention can be done more safely after a period of rehabilitation. However, it is now generally known that the mortality rate of acute massive hemorrhage from duodenal ulcer in the age group above 60 years is from 6 to 8 per cent. The surgical problem in this group resolves itself into a differentiation between those who will and those who will not cease bleeding. This determination must be made, if possible, early in the course of observation. Operations of last resort, after two or three days of observation, when it became apparent that the patient was not going to cease bleeding, have been done by the author and the results have been most discouraging. Such terminal operations are not recommended because of the exceedingly high mortality. At the present time an attempt is being made to determine, during the first 24 to 36 hours of observation, those cases in the older age group who show clinical and laboratory evidence of continued bleeding. These cases are managed as acute surgical emergencies. Partial gastrectomy with excision of the ulcer is the operation of choice, in spite of the seriousness of the situation. Obviously multiple-unit blood transfusion is essential during the operation. Partial gatrectomy is the operation of election in the rehabilitated patient after acute hemorrhage. Although experience has demonstrated that some of these patients will develop hemorrhage after partial gastrectomy, my recent observations and the reported cases of serious to fatal hemorrhage relatively soon after vagotomy have led me to consider massive hemorrhage as a contra-indication for vagotomy, except as an adjunct to partial gastrectomy in selected cases.

VAGUS RESECTION

About a year ago it occurred to the author that vagus resection might be added to the operation of subtotal gastric resection in certain cases of severe ulcer complications. This was not original, but was prompted by the thought that this combined procedure provided for control of the psychic phase of hypersecretion through vagotomy and for control of the humoral phase through excision of the prepyloric mucosa. Accordingly, a small series of the combined operations was done. By careful observation it could be determined that the immediate postoperative course was different from that of subtotal gastric resection, with the exception of one case who complained of flatulence and moderate diarrhea. There was no mortality. The series is too small to be of statistical value, but it does demonstrate that in very severe ulcer manifestations in a patient of very nervous temperament in whom the cephalic phase of hypersecretion is apt to predominate, the two operations may be combined. There may be a field for this combination.

The consensus of opinion at the present time is that complete vagotomy, probably by the transthoracic approach, is the management of preference in postoperative anastomotic ulcer. A word of caution may be offered here in the following case.

Mr. F. S., a 46-year-old white man, was admitted to the Hospital in November 1947, because of persistent upper abdominal pain and gastro-intestinal bleeding manifested by hematemesis and melena. He gave a history of having had cholecystectomy for gall stones and posterior gastro-enterostomy done for a duodenal ulcer in 1930. His last bleeding had occurred five weeks prior to his admission and it was clasified as massive. Upon two previous occasions bleeding had necessitated hospitalization and blood transfusions. He was studied on the Medical Service and a diagnosis of bleeding marginal ulcer was made, and X-rays of the stomach were made that appeared to confirm the diagnosis (Figure 2). A surgical consultation was forwarded to the author who at first favored transthoracic vagotomy. The patient was then reviewed at the Gastro-intestinal Clinic and primarily because of the recurrent hemorrhages, it was decided to make an abdominal approach, take down the gastro-enterostomy and do a resection. The patient was operated on December 16, 1947. At operation it was found that he had a posterior penetrating duodenal ulcer, but he not only did not have an ulcer in the stoma, he had no stoma in that a gastro-enterostomy had never been made. A subtotal gastric resection was done, excising the ulcer. Figure 3 represents the postoperative study. This resection is higher than is routinely performed by the author. The patient is well at the present time. The details of an almost identical case, operated upon by a friend of mine, were reviewed recently. These cases emphasize the importance of direct examination of the pathology. This is again emphasized in the following case:

ABDOMINAL PAIN

Mr. R. M., a 48-year-old laborer, was admitted to the hospital because of acute upper abdominal pain. Three years previously he had suffered an acute perforation of a duodenal ulcer, which was surgically closed. He had had recurring distress and upon several occasions had vomited blood in the three-year interval. A second perforation was suspected upon admission, but after careful examination, it was determined that the acute pain was largely on the basis of pyloric obstruction. The patient was treated medically for six weeks, but with persistent high acids and ulcer distress; therefore, he was operated on September 15, 1947, at which time vagus resection and a mid-gastric resection were done. The findings consisted of:

1. Cicatrical pyloric narrowing.
2. Healed, opposing duodenal ulcers.
3. Multiple active benign gastric ulcers.

While the gastric ulcers were benign in this case, the combination of duodenal ulcer and gastric carcinoma has been reported. Furthermore, many juxtapyloric peptic ulcers are so situated that it is difficult for the roentgenologist, the surgeon and sometimes the pathologist to determine their exact nature. Until such time as the exact relationship of this type of ulcer to gastric carcinoma is established, direct surgical examination and gastric resection would seem indicated.

SUMMARY

1. The indications for surgical management of duodenal ulcer have been reviewed.
2. A current poll of the opinions of twenty-five

qualified surgeons on the question of vagotomy versus gastric resection in the surgical management of duodenal ulcer in reasonable risk patients has been offered.

3. The author's evaluation of the various surgical procedures has been presented.

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FEASIBILITY CONSIDERED

It would be well for each medical society to consider at least the feasibility of recording the scientific part of their program. SOUTHWESTERN MEDICINE is desirous of obtaining local material for publication. The Board of Managers fully realizes that the busy practitioner in the Southwest finds it difficult to take the necessary time to write formal papers.

He does, however, present before his Society interesting cases; and from these cases the readers of SOUTHWESTERN MEDICINE can derive benefit. Let us consider for a moment the possibilities for the publication of scientific data. Had local societies adequate recording apparrati, they could record each month the scientific programs from their meetings, scientific programs from special societies, such as gynecological societies, programs from staff meetings of civilian hospitals, and from military and veterans' hospitals, and in addition the proceedings of such special clinics, as, for example, the tumor clinics. Now, if you multiply these transcriptions by the number of local societies that SOUTHWESTERN MEDICINE reaches, one can see great possibilities for a publication confined in great part to Southwestern authors.

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Such a publication as ours has for its object the dissemination of medical thought interesting particularly to the physicians of the Southwest, and if we are to attain our objective, we must have local contributions. For this reason, the Editorial Board of SOUTHWESTERN MEDICINE respectfully suggests that the local medical societies strongly consider the feasibility of recording the scientific portions of their programs, and for that matter, the program in general, particularly legislative matter, for consideration for publication. If these recordings are made available to the Editorial Board of SOUTHWESTERN MEDICINE they will be transcribed, edited, or abstracted, and returned to the presenting speaker for his corrections and permission prior to their publication.

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